



A Technical Newsletter of the Highways & Local Programs Service Center — WSDOT and the Local Technical Assistance Program Issue 70, Spring 2001

# Washington State Technology Transfer

#### WST2 Washington State Technology Transfer

is published four times a year: February/May/August/November

by WSDOT Highways & Local Programs Service Center Washington State Technology Transfer Center 310 Maple Park Ave. SE PO Box 47390 Olympia, WA 98504-7390

e-mail: wst2center@wsdot.wa.gov Home Page: www.wsdot.wa.gov/TA/T2Center/T2hp.htm

Issue 70, Spring 2001

POSTMASTER: Send address changes to P.O. Box 47390, Olympia WA 98504-7390

Include both old label and new address, please.



### Contents

## **T**echnology News

Changing of the Guard	4-7
Welcome to Liana Liu, FHWA	9
Danger Signs Video Recalled by FHWA	10
Ecology Stormwater Manual & Continuous Flow Modeling	10-11
CONGRATULATIONS TO ALL! A New Record for STIP Approval	11
WST2 Center Sponsors Millennium MUTCD Videoconference	12-13
Capital Facilities Planning Template and Tools	14-15
Conferences & Meetings	55

### Articles

Photogrammetry Products and Processes — Things You Should Know	16
WSDOT Phases In Fluorescent Orange Sheeting & NCHRP 350 Compliant Construction Signs	18-19
Road Safety Audits-Proactive Safety	22
High Performance Concrete (HPC) in Washington State	21
Pooled-Fund Study to Validate Geotech Device	17

## Departments

From the Editor's Desk	3
PQT News	
The Washington Partnerships for Quality Transportation (PQT) Award Winners Are	24-25
Evergreen Interchange Partnership Project Nears Completion	26
State/County Collaboration Saves Time, Dollars	27
Partnering: Design-Build Pilot Project	26-27
NWPMA News	
Words From the Chair	34-35
WST2 Center Partners to Develop Web-Based Pavement Training	36
Nomination Form for Keith Kay Memorial Pavement Manager of the Year 2001	37
Nomination Form for 2001-2002 Officers and Executive Board	37
USDOT-NHTSA/FHWA	
Focus on Safe Communities	38
Buckle Up America!	38-39
Pedestrian/Bicycle Safety Materials Available	40
The Intermodal Transportation Database Available!	39

### Departments (continued)

#### **BTEP**

2121	
B.C. Team Collects Information on Washington State Seismic Damage	42-45
WSDOT Library — Looking Forward and Looking Back	41
Roger's Technology Toolbox — Is there a DIP in your future?	46-49
Build a Better Mousetrap	
Breakaway Sand Spinner	30-31
Tack Distributor Waste Diesel Recycling System	28-29
Mousetrap Submittal Form	33
Publications From Your WST2 Center	50-51
Training	
Training Opportunities	52-54
Sign Of the Time	56



## WST2 is available on-line:

http://www.wsdot.wa.gov /TA/T2Center/T2Bulletin-archives/ T2Bulletin.html

If you would like to receive an electronic version via e-mail you can subscribe through our "T2 Newsletter" list serve. Go to the WSDOT Home Page. Click on Business with WSDOT, Highways & Local Programs, T2 Center, T2 Bulletin List Serve. Go to the bottom of the page and enter your e-mail address, then click on "Submit." An address verification will be sent to the subscription address. Authorization must be sent to the list request address before the subscription is accepted.

## WST2 in hard copy via:

U.S. Mail, call the WST2 Center at (360) 705-7386 and request it. Be prepared to give your name, agency or firm, mailing address, and zip code +4.

If you have a change of address, please contact us with the old and new addresses.

If your agency or firm receives issues addressed to a person who no longer is employed there, please call the WST2 Center at (360) 705-7386.

### rom the Editor's Desk



Dan Sunde Director of Technology Transfer WST2 Center

#### From the Editor's Desk

A lot of exciting things have happened since the last issue of the WST2. First, we welcomed aboard our new Secretary of Transportation. After 35 years of public service, former Secretary Sid Morrison retired and Doug MacDonald, a native Washingtonian, came home from the east coast to assume the position of Secretary of Transportation. There are exciting times ahead and we look forward to continuing our efforts to improve the quality and efficiency of transportation services in Washington under Secretary MacDonald's leadership.

We also welcome Liana Liu, P.E. to the LTAP in Washington. Liana steps in as the new Technology Transfer Engineer for the FHWA Division Office in Olympia. She comes to us with a wealth of engineering experience and an enthusiasm for the program. Liana has already been helpful in securing special projects that will be beneficial to local agencies.

The WST2 Center would like to thank Kathy Nichols, P.E., Pavement Engineer, FHWA Olympia Division Office, for all her outstanding support while filling in as the FHWA T2 Engineer this past year. With her spirit of cooperation and partnering, Kathy has been great to work with. She has helped develop several successful partnerships involving the WST2 Center. The most noteworthy of these was her assistance in coordinating the Pacific Northwest Transportation Technology Expo, providing FHWA co-sponsorship of the Expo and securing funding to transporting research equipment to the Expo.

Speaking of the Technology Expo, we are pleased to announce that the Pacific Northwest Transportation Technology Expo 2001 is in the works! We plan on being bigger and better than last year! We invite you to not just attend but to participate! Bring your most successful inventions, tool modifications, equipment modifications and process improvements to share with other agencies. The "Better Mousetrap" exhibit was one of the most successful elements of the first Expo. The benefits received through the exchange of successful ideas more than paid back the time and money invested in participation. One of last year's mousetrap presenters told me, "I came thinking I was only going to show our mousetrap, but I'm going home with six ideas we're going to implement in our own shop." This is technology transfer at it's best.



Dan Sunde Director of Technology Transfer WST2 Center

Secretary of Transportation
Douglas B. MacDonald

Assistant Secretary, H&LP Paula Hammond, P.E.

**Director of Technology Transfer** Dan Sunde, P.E.

**Publication Editor** Dan Sunde, P.E.

Assistant Editor Wendy Schmidt

**Graphic Design**Jennie Throckmorton
Coelleen Hallowell

Staff Writers Bob Brooks Roger Chappell Laurel Gray Dave Sorensen

The Local Technical Assistance Program (LTAP) is a national program financed by the Federal Highway Administration (FHWA) and individual state transportation departments. Administered through Technology Transfer (T2) Centers in each state, LTAP bridges the gap between research and practice by translating state-of-theart technology into practical application for use by local agency transportation personnel.

Any opinions, findings, conclusions or recommendations presented in this newsletter are those of the authors and do not necessarily reflect the views of WSDOT or FHWA. All references to proprietary items in this publication are not endorsements of any company or product.







# Washington State Technology Transfer

#### WASHINGTON STATE T2 STAFF

#### Daniel L. Sunde, P.E.

WST2 Director SundeD@wsdot.wa.gov (360) 705-7390

#### Roger Chappell

Engineer

ChappeR@wsdot.wa.gov (360) 705-7539

#### **Laurel Gray**

Training Coordinator GrayL@wsdot.wa.gov (360) 705-7355

#### **Bob Brooks**

Pavement Technology Engineer BrookBo@wsdot.wa.gov (360) 705-7352

#### David Sorensen

Traffic Technology Engineer SorensD@wsdot.wa.gov (360) 705-7385

#### Wendy Schmidt

WST2 Assistant SchmidW@wsdot.wa.gov (360) 705-7386

#### John Easley

Road Show Trainer (360)-705-7386

#### Fax

(360) 705-6858

#### WST2 Web Site

www.wsdot.wa.gov/TA/T2Center/T2hp.htm Toll Free Training Number 1-800-973-4496

#### WASHINGTON STATE T2 ADVISORY COM ITTEE

#### **Gary Armstrong**

City Administrator City of Snoqualmie (425) 888-5337

#### Phil Barto, Chairman

Maintenance Engineer Spokane County (509) 477-7429

#### Mike Deason

Public Works Director City of Leavenworth (509) 548-5275

#### Randy Hart

Grants Program Engineer County Road Administration Board (360) 664-3299

#### Marjorie Hutchinson

South Zone Engineer Naches Ranger Station, USFS (509) 653-2205 ext. 261

#### Will Kinne

Road Operations Manager Pierce County (253) 798-2953

#### Tamarah E. Knapp, P.E.

City Administrator City of Buckley (360) 829-1921 ext. 200

#### Liana Liu, P.E.

Highway Engineer T2 Coordinator, FHWA (360) 753-9553

#### Jack Manicke

Staff Superintendent WSDOT/Maintenance (360) 705-7852

#### Phil Meyer

Maintenance Coordinator Whitman County/EWCRS (509) 397-6206

#### Walt Olsen

County Engineer Pend Oreille County (509) 447-4513

#### Craig Olson

Government Services Manager ENTRANCO/APWA (360) 709-0301

#### **Tom Rountree**

Road Maintenance Supervisor King County DOT/RSD (206) 296-8100

#### Jim Seitz

Transportation Specialist Association of Washington Cities (360) 753-4137

#### Dave Zabell

Director of Public Works City of Bothell (425) 486-2768

#### ASSOCIATE MEMBERS

#### Joe Bonga

Road Construction/Maintenance Bureau of Indian Affairs (503) 231-6712

#### Ovidiu Cretu

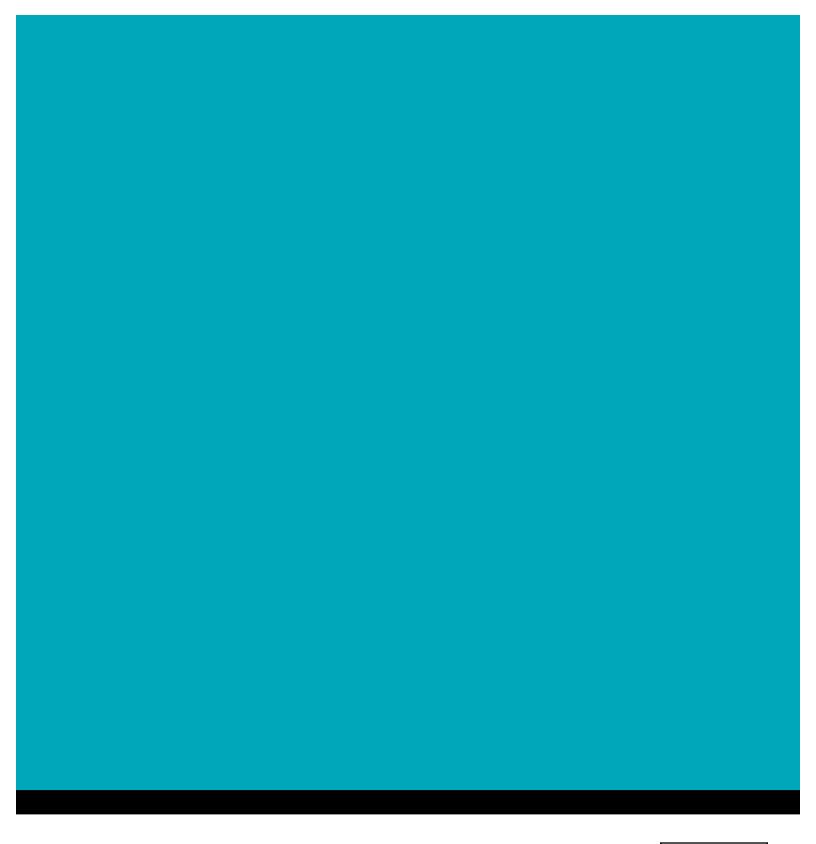
Manager, Technical/Professional Programs WSDOT Staff Development (360) 705-7066

#### Kathy Lindquist

Research Implementation Manager WSDOT Research Office (360) 705-7976

#### Richard Rolland

Director NW Tribal LTAP (509) 358-2225





Washington State Technology Transfer Center WSDOT-H&LP Service Center P.O. Box 47390 Olympia, WA 98504-7390 PRSRT STD U.S.POSTAGE PAID

Washington State Department of Printing